

APPARATUS AND A METHOD TO ENHANCE DECONTAMINATION OF FINE-GRAINED SOIL PARTICLES

ABSTRACT

An apparatus and method are described for improved efficiency in washing resistant contaminating chemicals, metals, hydrocarbons, and radioactive substances from very-fine-grained soil particles. Decontamination is accomplished by two opposing streams of high-velocity wash fluid each depressed at 10^6 being introduced into a faceted wash chamber at a relative velocity of 500 to 1500 feet per second. Two streams of contaminated slurry are introduced into each high-velocity, high-kinetic-energy wash-fluid stream forming an admixture which is accelerated onward into a multifaceted wash chamber. The process constitutes five washing stages within a metal enclosure designed to efficiently utilize the significant quantity of kinetic energy available in incoming, high-velocity wash fluid by maintaining a high level of turbulence and shear among the particles of the admixture. The design of the apparatus provides 400% of the kinetic energy of a single stream of wash fluid. It is the express purpose of this invention to provide means to effectively utilize the significant quantity of kinetic energy to dislodge contaminants from fine-grained soil particles. The apparatus and process herein disclosed substantially reduce the costs and problems experienced by traditional methods employed in washing very fine-grained soil particles.

2 Claims, 2 Drawing Figures